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Anaerobic Digestion: Regulatory Drivers



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Water Quality

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- Ag Water Quality Act
 - Division of Conservation
 - The goal of the act is to protect surface and groundwater resources from pollution as a result of agriculture and silviculture (forestry) activities.
 - Nutrient Management Plans
- Kentucky No Discharge Operational Permits issued by Ky Division of Water
 - <http://www.lrc.ky.gov/kar/401/005/005.htm>
- Increasing attention (EPA) to nutrient loading on the waters of the Commonwealth



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Compliance Problems

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- Management of Lagoons
 - Lagoon Design
 - Capacity problems
 - Leaking lagoons
- Spray Irrigation Problems
 - Application rate
 - Contractor practices
 - Seasonal problems



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So, What?

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- If you cannot operate your manure management system in compliance with permit conditions and without degrading the waters of the commonwealth, then an alternative management system may be appropriate
- Mismanagement can have serious human health impacts
 - E-coli
 - Fecal Coliform



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Example Issues

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The Consequences

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- The 1993 **Milwaukee Cryptosporidium outbreak** was a significant distribution of the *Cryptosporidium* protozoan in Milwaukee, Wisconsin, and the largest waterborne disease outbreak in documented United States history.
 - <http://animal.discovery.com/videos/monsters-inside-me-cryptosporidium-outbreak.html>
 - initially it was determined to be caused by the cattle genotype versus human genotype of the parasite as originally suggested

Greenhouse Gas (GHG) Issues

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- Endangerment Finding
 - EPA's determination that greenhouse gas emissions are "reasonably ... anticipated to endanger human health and welfare"
- So, What's the Big Deal?
 - EPA has the authority to regulate GHG
 - It's not a done deal!

GHG (Continued)

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- GHG Mandatory Reporting Rule (GHG MRR)
 - Report only
- Tailoring Rule
 - Permitting of GHG

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GHG MRR

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- Requires reporting of greenhouse gas (GHG) emissions from all sectors of the economy in the United States
- Provides accurate and timely data to inform future climate change policies and programs
- Does not require control of GHG



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Who Reports?

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- A facility must evaluate each source category to assess applicability to the rule. “All-in” source categories: All of the facilities that have an “all-in” source category within their boundaries are subject to the rule.
- Threshold categories: Aggregate these categories to assess the 25,000 metric tons CO₂e per year reporting threshold

When to Report and How?

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- Electronic Reporting to EPA
 - Note: There is no state reporting requirement nor does Ky DAQ report GHG to EPA for facilities
- Monitoring begins January 1, 2010; first reports due March 31, 2011



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Permitting of GHG

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- On December 23, 2010, the U.S. Environmental Protection Agency (EPA) issued a series of rules that put the necessary regulatory framework in place to ensure that
 - 1) industrial facilities can get Clean Air Act permits covering their greenhouse gas (GHG) emissions when needed and
 - 2) facilities emitting GHGs at levels below those established in the Tailoring Rule do not need to obtain federal Clean Air Act permits.

Permitting (Continued)

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- EPA has been working with state local agencies since that time to make sure that:
 - All permitting agencies have the authority to permit GHGs or are on the path to have such authority, with EPA serving as the permitting authority in the interim, and
 - Only those sources identified in the tailoring rule the largest emitters of GHGs are required to obtain permits.



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What Does All of This Mean?

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- Greenhouse gases are on the regulatory radar
- Small sources and farms are not included NOW
 - So, Why reduce GHG emissions if I am not required to?
 - Image: Carbon neutrality/carbon footprint
 - Getting ahead of the game
 - “The right thing to do”
 - It may make operational sense
 - Economic
 - Production capacity

Questions and Contact

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